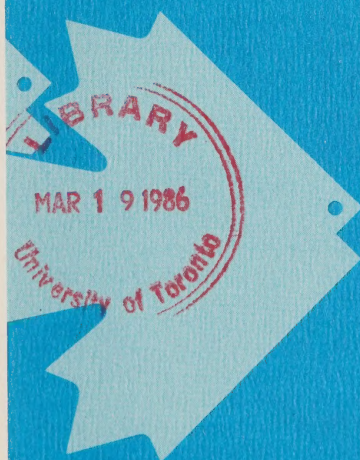


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# ING, HANDLING, OLDING & SPORTATION UIREMENTS



COMPLIANCE

GULATIONS

INSPECTION BRANCH  
OTTAWA, CANADA  
DECEMBER, 1984

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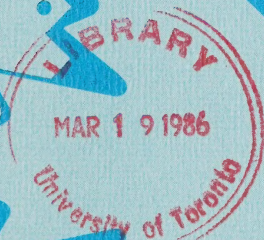


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# UNLOADING, HANDLING, HOLDING & TRANSPORTATION REQUIREMENTS



## HANDBOOK OF COMPLIANCE

FISH INSPECTION REGULATIONS  
SCHEDULE V

INSPECTION BRANCH  
OTTAWA, CANADA  
DECEMBER 1984



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# Schedule V

## REQUIREMENTS FOR VEHICLES & EQUIPMENT USED FOR UNLOADING, HANDLING, HOLDING AND TRANSPORTING FRESH FISH FOR PROCESSING

### Introduction

These Compliance Requirements refer to Schedule V of the Fish Inspection Regulations made by Order in-Council P.C. 1982-2624. These requirements were developed as part of the National Program to improve fish quality following a series of consultations with the Canadian Fishing Industry.

Sections 20 and 21 of the Fish Inspection Regulations state that:

#### Section 20:

No person shall unload, handle, hold or transport fish intended for processing unless the unloading, handling, holding or transportation meets the requirements of **Schedule V**.

#### Section 21:

No person shall export, process for export or attempt to process for export any fish unless the unloading, handling, holding and transportation have been conducted in accordance with **Schedule V**.

The purpose of these Regulations is to ensure that fish unloading sites and transport vehicles meet standards of construction, equipment, and operation consistent with recognized food handling practices. To achieve these objectives, it is essential that the construction of unloading sites and transport vehicles, their equipment and utensils, and operating practices fully comply with the requirements of this Schedule.

This Handbook of Compliance is written in a format which shows the Schedule item, the reason for inclusion of that item in the Schedule, and the minimum level of compliance necessary before the Department would consider that the requirements of that item have been met.

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## **Schedule V**

### **Requirements for Equipment and Transport Vehicles Used for Unloading, Handling, Holding, and Transporting Fresh Fish for Processing**

#### **FISH HANDLING EQUIPMENT & PRACTICES**

##### **Item 1:**

Forks, pumps, tools, or other equipment and practices that pierce, tear, or otherwise damage or contaminate the edible portion of fish shall not be used.

##### **Reason:**

The use of forks or the improper use of pumps, shovels and gaffs will result in discoloration, bruising, blood clots, and muscle separation of the edible portion of the fish.

Physical damage caused by sharp instruments will hasten bacterial spoilage resulting in a shortening of the shelf life of the fish, deterioration in quality, and lower yields during processing.

It must be emphasized that fish quality deteriorates rapidly, and the potential keeping time is considerably shortened if the fish are not handled, stored, and transported properly.

To avoid physical damage and textural defects, fish should not be forked or thrown onto the wharf, walked over or roughly handled.

The presence of animals around fish unloading sites and transport vehicles is highly objectionable as they and their excreta are a major contamination hazard.

##### **Compliance:**

It is recommended that special purpose fish unloading systems such as conveyors, hoists, netbags, or onboard removable containers fitted with lifting lugs, be used for unloading fish at the wharf.

The use of forks is prohibited. Gaffs or single tined implements may be permitted where no alternate method exists for handling or unloading provided the fish are gaffed or pronged in the head. Pumps and air unloaders will be approved, provided they are constructed and operated in such a manner that will minimize physical damage to the fish and allow access for cleaning.

Fish shall not be walked on, forked or thrown onto the wharf, or dropped into boxes, but rather handled gently by means of chutes or conveyors, etc.

Animals are not permitted around unloading sites or transport vehicles.

##### **Item 2:**

Fish handling equipment, such as chutes, conveyors, fish washers, tables and utensils, shall be of smooth, non-absorbent, non-corrodible material, other than wood, free from cracks and crevices and so constructed as to facilitate cleaning.

### **Reason:**

Corrosion resistant material is required in order to preclude the possible contamination of the product by such substances as rust.

It is essential that the surfaces of all fish handling equipment be made of a non-absorbent and crevice-free material so that they will not become saturated with bacteria containing juices which would give rise to off odors and be a source of contamination to the product.

It is also imperative that handling and unloading equipment be constructed in a manner which provides accessibility during regular cleaning operations and prevents accumulation of debris that might cause contamination.

### **Compliance:**

All processing equipment, such as chutes, conveyors, fish washers, tables and utensils, shall be constructed of approved materials. Examples of approved material are stainless steel, saltwater-resistant aluminum alloys, high density plastic, and fiberglass reinforced plastic. Galvanized metal and epoxy coated wood will not comply.

Cutting boards may be of hardwood construction but must be smooth with no cracks or crevices.

Such equipment shall be open and accessible, or easy to dismantle for cleaning of all parts.

Special purpose light colored acceptable coatings may be applied to *existing wooden equipment*. If there are severe cracks, crevices, or gouges, however, the wooden equipment will have to be replaced with equipment constructed of approved material.

Lists of acceptable coatings are available from an Inspector.

## **CONSTRUCTION OF STORAGE AREAS**

### **Item 3:**

- (a) **Fish shall be transported in covered containers approved by the Minister or enclosed vehicle bodies.**
- (b) **The contact surfaces of fish storage areas in vehicles and of containers used for transporting fish shall be smooth, free from cracks and crevices and made of non-corrodible material.**

### **Reason:**

It is essential that **all** surfaces with which fish come in contact with be constructed of a non-absorbent and crevice-free material that will not become saturated with bacteria containing juices which could give rise to off odours and be a source of contamination.

Corrodible materials are objectionable because the products of corrosion may contaminate the ice or fish.

Wood is objectionable because it will become soaked with fish juices, blood, and slime, all of which contain large number of spoilage bacteria and provide a fertile media for their growth. As a result, wood surfaces quickly become sour, giving rise to unpleasant odours, and are a major source of bacterial contamination to the fish and ice coming in contact with them.



### **Compliance:**

Vehicles which are used for transporting hazardous or unsanitary materials shall **not** be used for transporting fresh fish. Examples of these materials are chemicals, pesticides, fertilizers, fish offal, waste, garbage, etc. Vehicles that are used for purposes other than transporting fish shall use approved containers when carrying fish.

Containers used to hold fish at dockside, or to transport fish on board trucks, shall be constructed of approved materials such as saltwater-resistant aluminum alloys, high density plastic, or other materials approved for contact with food. They shall also be free of cracks and crevices, be constructed to provide drainage, and to prevent crushing when stacked. It is intended to tolerate the use of **existing** wooden containers that are suitably coated and well maintained.

Containers carried in open vehicles shall be completely covered. Rigid or non-rigid, preferably insulated, non-absorbent plastic or rubberized covers, if adequately secured, may be used. Canvas tarpaulins are not acceptable.

Vehicles used solely for transporting fish are not required to use containers, provided the bodies of such vehicles are constructed of smooth, impervious, non-corrodible material, and are enclosed. Wooden contact surfaces will be tolerated provided they are suitably coated and well maintained.

The transportation of live lobsters or shellfish, and fish transported for the **sole** purpose of roe extraction, will continue to be permitted in wooden containers.

Special purpose, light colored acceptable coatings may be applied to **existing** wooden containers and contact surfaces. If there are severe cracks, crevices, or gouges, however, the wooden containers or contact surfaces will have to be replaced.

Lists of acceptable coatings are available from an Inspector.

### **Item 4:**

- (a) The containers and vehicle bodies used to hold or transport fish shall be filled to a level no higher than 90 cm of its depth.
- (b) The body of a vehicle used for transporting fish in bulk shall be divided at intervals of 1 m along its length.

### **Reason:**

Bulk storage of fish during transportation at a height greater than 90 cm in **very large containers** or without "shelving and penning", will result in excessive pressure on the fish at the bottom of the containers or vehicle bodies. This crushing of the fish will result in a loss of texture and possible mutilation. The resultant squeezing out of quantities of liquids and juices will cause significant weight loss.

### **Compliance:**

Vehicles that transport fish in bulk shall be shelved at 90 cm intervals. Vehicles with chilled water or slush ice systems, such as herring tankers, are exempt from this requirement. Some species of fish are more susceptible than others to damage by



crushing. For example, crustaceans, mackerel, and herring should be stored at depths less than 90 cm, such as follows:

Mackerel	- 60 cm
Herring	- 60 cm
Crab	- 60 cm

Where fish is transported in bulk, the vehicle body shall also be penned at intervals not longer than 1 meter along its length. Pens are not required in vehicles transporting fish in chilled water or slush ice.

Where fish is transported in containers, it should not be placed in these containers to a height greater than 90 cm.

## **PRESERVATION OF FISH**

### **Item 5:**

- (a) **Fish held prior to being transported shall be iced or chilled after unloading from a vessel and be protected from the sun and weather and from contamination.**
- (b) **Fish shall be iced or chilled while being transported.**

### **Reason:**

Temperature is the **single most important factor** influencing the keeping quality of fish. Sufficient ice must be available to enable adequate icing of the fish.

Each degree rise in temperature increases the rate at which spoilage bacteria present on the surface and in the gut of the fish multiply. This in turn serves to decrease the quality and shelf life of the fish.

### **Compliance:**

Fish held prior to transport shall be covered to protect the fish from the sun, weather, and contamination. They shall be iced at a recommended ratio of 1 part flaked or finely divided ice to 3 parts fish. Where chilled water systems are used, they must be capable of reducing the temperature of the fish to 4°C or lower.

The ice supply must come from an approved source to prevent contamination of the unloading site equipment, the transport vehicle(s) involved, and the fish. Care must be taken at the unloading site to properly handle, hold and store the ice and fish so that neither becomes contaminated with extraneous contaminating material such as dirt or bird droppings.

Fish transported in vehicles shall be iced or chilled. Where ice is used, the recommended ratio is 1 part flaked or finely divided ice to 3 parts fish. When fish is transported in bulk, especially on long trips, icing should be heaviest against vehicle sides and floor to prevent contact with surfaces which could result in an offensive type of microbial spoilage (i.e. bilgy fish).

Icing or chilling requirements may be reduced if the temperature of the fish delivered to the processing plant does not exceed 4°C. Chilled water systems are acceptable for transporting fish, provided the temperature of fish can be maintained at a temperature of 4°C or lower, and that the fish are protected from the sun, weather and contamination.

Ice left over from a vessel which has just completed a fishing trip should not be used to ice down fish on a transport vehicle if the ice is contaminated with ice meltwater, blood, and slime, all of which contain large numbers of spoilage bacteria.

Fish that is being transported for the sole purpose of roe extraction, and live shellfish and lobsters are exempt from the icing and chilling provisions of this section.

## **WATER SUPPLY**

### **Item 6:**

**Water used for unloading, washing or transporting fish shall be clean and obtained from a source approved by a fish inspection laboratory.**

### **Reason:**

This action is necessary to ensure that the water supply will not be a source of contamination to the fish.

### **Compliance:**

This section will be satisfied when the source and supply of water for cleaning or sanitizing facilities and equipment used in unloading, handling and transporting fish are approved by a Fish Inspection Laboratory. Approval shall be based on the general sanitary conditions of the area and the results of standard bacteriological analysis of water. This shall be based on an official sample of five, using a 5:5:5 multiple-tube MPN procedure that shows not more than two faecal coliforms per 100 ml (as a median value) with no single sample exceeding six faecal coliforms per 100 ml.

The source and supply of water for use in **fish unloading, fish washing or other practices where the water comes in contact with the fish** must also be approved by a Fish Inspection Laboratory. Water for such uses must have a coliform bacteria count of not more than 2 per 100 ml.

Harbor water, or water from alongside the dock must never be used for unloading, washing or transporting fish as it is usually heavily polluted with spoilage and disease causing bacteria which could contaminate the fish. This is also usually true for water in close vicinity to towns, villages, industrial plants, fish plants and freezer/factory ships.

Where acceptable water supplies are not readily available for cleaning or sanitizing facilities and equipment used in unloading, handling, or transporting fish, the problem of acceptable water supplies will be dealt with on a site by site basis for compliance not later than April 1, 1986. Water that comes in contact with fish during unloading etc., must meet the microbiological standard quoted above.

## **OFFAL & REFUSE DISPOSAL**

### **Item 7:**

**Offal and other refuse shall be disposed of in a manner satisfactory to an inspector.**



### **Reason:**

The accumulation of offal or other refuse near unloading sites or transport vehicles, is unsightly and may give rise to obnoxious odors and unsanitary conditions. Furthermore, insects, maggots, rodents, and other animals may be attracted.

### **Compliance:**

The method of offal and other refuse disposal must be such that obnoxious odors and unsanitary conditions are not created around fish unloading and handling areas. Increases in the numbers of insects, rodents, maggots, and other animals result from unsanitary conditions, and are unacceptable.

## **SANITATION**

### **Item 8:**

**Areas where fish is landed or handled and all surfaces which come in contact with fish during unloading, handling, holding and transportation shall be maintained in a clean and sanitary condition.**

### **Reason:**

These practices are required to prevent buildup of slime laden with spoilage bacteria, blood and other residue on unloading site equipment, containers, and transport vehicles. Unclean surfaces will contaminate the fish and give rise to offensive odors.

### **Compliance:**

All surfaces of unloading, holding and handling equipment that come in contact with fish shall be thoroughly cleaned and disinfected with an acceptable sanitizer before and after use.

Vehicles and/or containers and associated equipment that come in contact with fish shall be thoroughly cleaned at the end of each trip, immediately after unloading. Cleaned surfaces shall be disinfected with an acceptable type of sanitizing agent.

It is most important that all cleaning be performed with water from an approved source so as to avoid overall contamination of vehicles, containers and fish handling, holding, and unloading equipment.

If filth, slime, scales, etc. are allowed to dry and/or accumulate, cleaning will be difficult. Thus, cleaning should commence promptly after unloading.

The following method of cleaning has been found to be the most effective:

- rinse with a high pressure jet of cold water to remove excess slime, blood, and scales;
- scrub with a stiff brush, or, high pressure cleaner, using an acceptable detergent;
- rinse with cold water;
- sanitize with cold water containing hypochlorite solution or another acceptable disinfectant;

- rinse again to remove the disinfectant.

Containers, utensils, penboards and shelfboards shall be allowed to air dry prior to stacking or storing.

For further information regarding these requirements, contact your regional Department of Fisheries & Oceans, Inspection Office.

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